

CLAIMS

1. A gene coding for a protein having activity of transferring a sugar to the chalcone 4'-position.
2. A gene according to claim 1, coding for the  
5 amino acid sequence listed as SEQ ID NO: 2 or 70.
3. A gene according to claim 1, which hybridizes to all or a portion of the nucleotide sequence listed as SEQ ID NO: 1 or 69 under conditions of 5 x SSC, 50°C and codes for a protein having activity of transferring a  
10 sugar to the chalcone 4'-position.
4. A gene according to claim 1, which codes for a protein having the amino acid sequence listed as SEQ ID NO: 2 or 70 with a modification of one or a plurality of amino acids that are added, deleted and/or substituted  
15 with other amino acids, and having activity of transferring a sugar to the chalcone 4'-position.
5. A gene according to claim 1, which hybridizes to DNA comprising all or a portion of the nucleotide sequence listed as SEQ ID NO: 1 or 69 under stringent  
20 conditions and codes for a protein having activity of transferring a sugar to the chalcone 4'-position.
6. A gene according to any one of claims 1 to 5, which is derived from the family *Scrophulariaceae*.
7. A gene according to claim 6, which is derived  
25 from *Antirrhinum majus* or *Linaria bipartita*.
8. A vector comprising a gene according to any one of claims 1 to 7.
9. Host cells transformed by a vector according to claim 8.
- 30 10. A protein encoded by a gene according to any one of claims 1 to 7.
11. A method of producing a protein having activity of transferring a sugar to the chalcone 4'-position, characterized by culturing or growing host cells  
35 according to claim 9 and obtaining said protein from said host cells.
12. A plant having a gene according to any one of

claims 1 to 7 introduced therein or a progeny of said plant having the same properties as said plant, or a vegetatively propagated plant or tissue from such a plant.

5           13. Flowers cut from a plant according to claim 12.

14. A method for transferring a sugar to the chalcone 4'-position using a gene according to any one of claims 1 to 7.

10           15. A plant having modified flower color obtained by introducing and expressing a gene according to any one of claims 1 to 7 into a plant, or a progeny of said plant having the same properties as said plant.

16. A plant according to claim 15, characterized in that the flower color has a yellow tint.

15           17. A method of introducing and expressing a gene according to any one of claims 1 to 7 together with a gene coding for aureusidin synthase in a plant to alter the flower color to yellow.

20           18. A method of introducing and expressing a gene according to any one of claims 1 to 7 together with a gene coding for aureusidin synthase in a plant, while also inhibiting expression of a flavonoid synthesis pathway gene in the host, to alter the flower color to yellow.

25           19. A method of introducing and expressing a gene according to any one of claims 1 to 7 together with a gene coding for aureusidin synthase in a plant, while also inhibiting expression of the dihydroflavonol reductase gene in the host, to alter the flower color to yellow.

30           20. A method of introducing and expressing a gene according to any one of claims 1 to 7 together with a gene coding for aureusidin synthase in a plant, while also inhibiting expression of the flavanone 3-hydroxylase gene in the host, to alter the flower color to yellow.

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